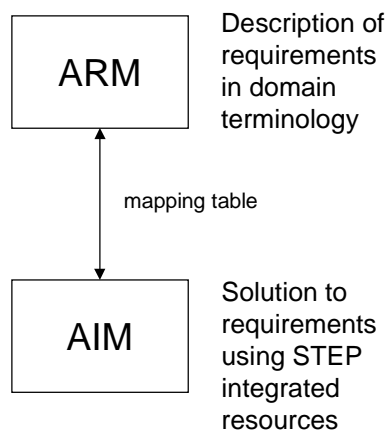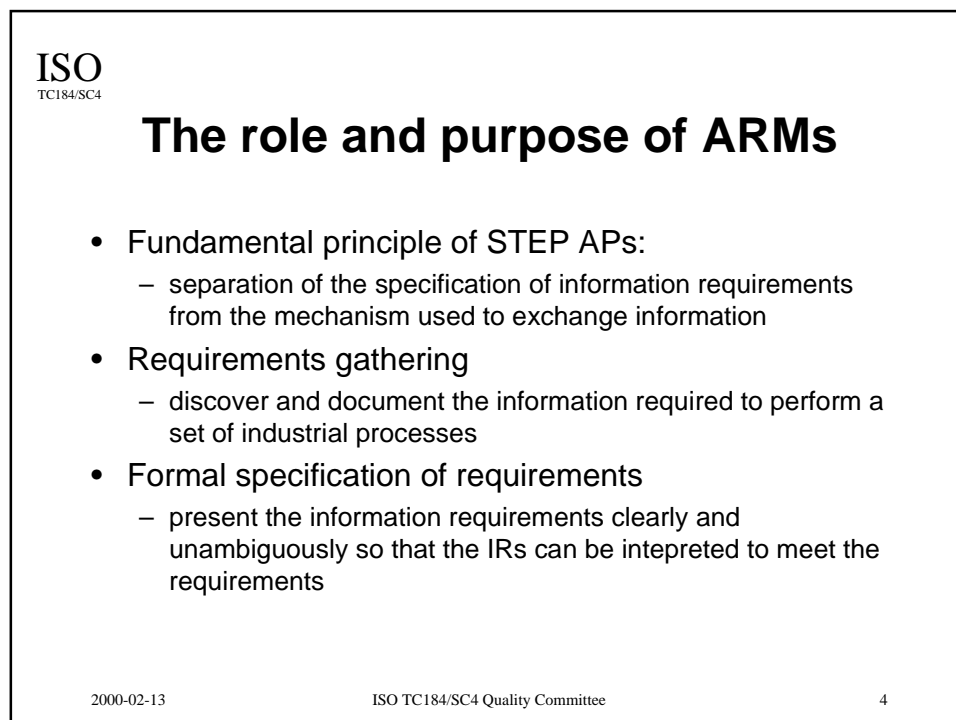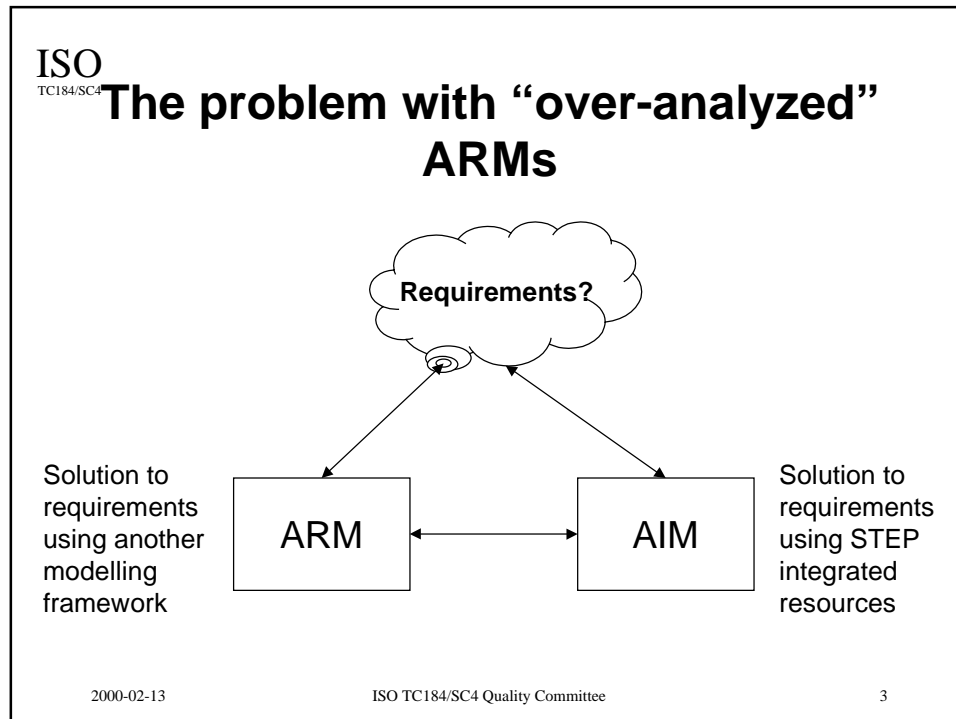ISO
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ARM Guidelines

- Purpose:
  - provide AP teams with guidance on "best practice" for ARM development
  - reflect experience of past AP developments
  - encourage ARM modelling practices that facilitate discovery and documentation of domain requirements
  - discourage ARM modelling practices that focus too heavily on solutions rather than requirements

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Position of the ARM in the STEP AP Architecture

ARM — Description of requirements in domain terminology

mapping table

AIM — Solution to requirements using STEP integrated resources

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TC184/SC4 **The problem with "over-analyzed" ARMs**

Requirements?

Solution to requirements using another modelling framework

ARM

AIM

Solution to requirements using STEP integrated resources

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The role and purpose of ARMs

- Fundamental principle of STEP APs:
  - separation of the specification of information requirements from the mechanism used to exchange information
- Requirements gathering
  - discover and document the information required to perform a set of industrial processes
- Formal specification of requirements
  - present the information requirements clearly and unambiguously so that the IRs can be intepreted to meet the requirements

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Issues

- Is EXPRESS-G / EXPRESS the best choice of language for ARMs?
  - what alternatives are there?
- Relationship between clause 4 (normative) and ARM (informative)
  - clause 4 doesn't allow representation of all features of a complex ARM
  - however, complex modelling structures may not be appropriate for the purposes of an ARM

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How is an ARM used?

- "Target audience" for ARMs:
  - domain experts (during development and review)
  - implementers
  - STEP experts (during interpretation)
- Demands of these audiences may be different:
  - implementer may see the ARM as a fully detailed application view on the AIM

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ARM Guidelines

- Would such a document be useful?
- What should it contain?
- Who has interest (and resources) to help develop such a document?

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Applying the "KISS" principle

- ARM should be sufficiently detailed to allow a complete description of the information requirements
- Avoid modelling structures that do not occur in the domain information:
  - multiple inheritance, complex instances
  - modelling abstractions
  - structural inheritance
- Don't apply generic concepts